

Science Scrapbook Directions

To reflect upon and apply what you have learned throughout the year in 7th grade science, you are going to create a “scrapbook” worth 30 points.

- Your scrapbook must contain at least **3 different entries**
 - One scrapbook page option must be from the Science Skills unit (A)
 - One scrapbook page option must be from one of the Organisms units (B-E)
 - Cells
 - Classification
 - Arthropods and Annelids
 - Ecosystems
 - One scrapbook page option must be from one of the Properties of Matter units (F-I)
 - Matter
 - Temperature
 - Mixtures and Solutions
 - Periodic Table
 - Note:
 - You can only use the “cartoon/comic strip” option ONCE
 - You can only use the “poem/song” option ONCE
- Each entry needs to be neatly done on a separate 8 ½ X 11” sheet of paper
 - Each entry should be a minimum of one front of a page and maximum of one front and one back of a page
 - Put your names on each entry
 - Label it with the name of the unit and the option #
- Neatly staple all of your entries together behind the completed title page
- If you use a source other than your notes (website, book, newspaper article, etc.), be sure to cite it by including its title, author, and in the case of online sources, its web address, somewhere on your scrapbook page (it could be on the back)
 - You can NOT use Wikipedia or Ask.com
- Each scrapbook page will be graded based on how completely and thoroughly you demonstrate an understanding of the topic

A. Science Skills

1. Create a poem or song about qualitative and quantitative observations, including their definitions and examples of each.
2. Design and conduct an experiment that tests one variable using the 5 steps of the scientific method.
3. Photograph and label at least 10 examples of objects or actions that portray science prefixes/suffixes from your Break It Down worksheet.
4. Measure the length, width, and height of at least 5 rectangular items using BOTH the metric system (centimeters) AND the English system (inches) and organize your data into a table.
5. Estimate AND THEN determine the actual mass of at least 10 different items and organize your data into a table (be sure to include units).
6. Draw and color a cartoon or comic strip incorporating at least 5 pieces of lab equipment and their uses (at least one needs to be the microscope).

B. Cells

1. Write at least 10 total interview questions you would ask Leeuwenhoek, Hooke, and Mendel about their work in science AND include their probable responses based on your research.
2. Create a poem or song about at least 10 organelles and their functions.
3. Find and summarize an article about genetics in the news. (Be sure to include the name and date of the newspaper/journal as well.)
4. Construct a family tree that traces at least 5 inherited traits through at least 3 generations of your family.
5. Research a genetic disorder that can result when chromosomes do not correctly separate and write your own newspaper article summarizing your findings.
6. Draw, color, and label the organs in at least 2 different human organ systems.

C. Classification

1. Draw and color a cartoon or comic strip depicting the 5 characteristics of all living things.
2. Research the common AND scientific names of at least 20 different organisms and organize them into a user-friendly guide.
3. Create a dichotomous key for at least 10 different items.
4. Research an example of at least 2 organisms from EACH of the following kingdoms; Archaeobacteria, Eubacteria, Protista, Fungi, Plantae (10 total organisms) AND include at least 2 interesting facts about each organism in your summary.
5. Create, describe, draw, and color an entirely new species AND determine its classification by explaining to which kingdom it would belong and WHY.
6. Classify 10 different animals according to their phylum (every phylum needs to be used at least once) using labeled pictures from computers/magazines/etc.

D. Arthropods and Annelids

1. Create a classified ad for at least 5 different insects that describes the positive role they play in our world and why they are needed.
2. Create a “wanted” poster for at least 5 different *insects* that are considered pests. Explain why specifically each is considered a pest and also explain how they can be prevented and managed using an integrated pest management approach (not just squashing or spraying them with chemicals).
3. Photograph and label the name of at least 10 different insects AND also label the order to which they belong.
4. Research at least 20 interesting facts about annelids and organize them in an interesting and informative brochure/pamphlet.
5. Create a poem or song that compares and contrasts blackworms and earthworms.
6. Draw and color a cartoon or comic strip describing why earthworms are valuable.

E. Ecosystems

1. Imagine you went on safari and kept a journal of the organisms you saw. Identify at least 5 organisms you encountered and explain the role of each within their population, community, ecosystem, and biome.
2. Label pictures (using the computer/magazines, etc) of at least 2 of EACH of the following; predator, prey, herbivore, carnivore, and omnivore.
3. Design, draw, and color a new species of animal that has a long tail, poor eyesight, flat teeth, sharp claws, and bright fur. Explain to which biome it is adapted AND how each of the above structures help it to survive there.
4. Create a poem or song about all three types of symbiosis and examples of each.
5. Draw and color a cartoon or comic strip about interspecific and intraspecific competition within an ecosystem.
6. Research at least 5 different keystone species and explain at least 2 interesting facts about each one in your summary, including why their survival is essential to the ecosystem in which they live.

F. Matter

1. Draw and color a cartoon or comic strip showing at least 5 examples of physical changes and 5 examples of chemical changes.
2. Determine your mass vs weight on the moon, Earth, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto.
3. Design and conduct an experiment that compares the density of at least 3 different solids and 2 different liquids.
4. Design, describe, and draw a PFD (personal flotation device) that would allow you to float and survive for days in the ocean AND explain how it would help you to do so.
5. Imagine you were Archimedes and write a letter to the king describing how you would determine if his crown was really made of gold.
6. Create a poem or song that defines and gives examples of at least 5 of the following terms: solid, liquid, gas, mass, volume, density.

G. Temperature

1. Write at least 10 total interview questions you would ask Galileo, Fahrenheit, and Celsius about their work in science AND include their probable responses based on your research.
2. Determine both the melting and boiling points of 10 different substances in both Celsius and Fahrenheit and organize your information into a data table.
3. Design, draw, and color your own hot air balloon AND explain how temperature, mass, volume, and density influence how it works.
4. Create a "blueprint" explaining at least 5 examples of how engineers need to consider expansion and contraction when building things.
5. Create a poem or song about how temperature and density influence weather.
6. Draw and color a cartoon or comic strip showing EACH of the following phase changes; melting, freezing, condensing, evaporating, boiling.

H. Mixtures and Solutions

1. Photograph and label at least 5 different examples of heterogeneous mixtures and 5 different examples of homogeneous mixtures.
2. Research at least 2 different alloys and write your own newspaper article summarizing your findings.
3. Create an advertisement for 2 different types of stain removers; one that removes water soluble stains and one that removes stains that are not water soluble. Research 5 examples of stains that are water soluble and 5 examples of stains that are not water soluble and include them in your ad.
4. Create a poem or song about how science can be used to separate solids from liquids (be sure to use vocabulary and real life examples).
5. Create a completed crossword puzzle with at least 20 clues using vocab words and their definitions from this unit.
6. Draw and color a cartoon or comic strip explaining why salt is used on icy roads AND when making ice cream.

I. Periodic Table

1. Draw and color a cartoon or comic strip about atoms.
2. Write at least 10 total interview questions you would ask Mendeleyev about his work in science AND include his probable responses based on your research.
3. Find and summarize an article in the news about an element on the Periodic Table. (Be sure to include the name and date of the newspaper/journal as well.)
4. Pick 5 elements and research practical uses for each. Summarize your findings in the form of a sales pitch to a new company.
5. Create a new element and determine where it would belong in the periodic table and WHY. Be sure to explain the following properties in your summary: atomic number, atomic mass, period, group, chemical family, stability/reactivity, melting point, boiling point, density, and uses.)
6. Create a poem or song about at least 5 of the following chemical families; alkali metals, alkaline earth metals, poor metals, metalloids, nonmetals, halogens, noble gases, transition metals, rare earth elements.